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ABSTRACT

"A Guide to Improving the National Education Data System" (1990) makes 36 recommendations for improving data collection in the areas of student/background characteristics, education resources, school processes, and student outcomes. This paper uses the framework of the "Guide" to review issues raised in "Education Counts," a recent examination of the nation's capacity to measure and monitor educational change, focusing specifically on data needed to address issues of educational equity with respect to student populations. The first section discusses current equity and at-risk policy issues and the data needed to address them. The second section looks more closely at the data currently available to address these items. The third section examines limitations in current data collections for addressing equity issues, and a fourth section provides specific recommendations for ways to improve the national data system to address equity issues. Recommendations center on the creation of student-based record systems, the linkage of elementary and secondary systems, the development of new measures and indicators, and the reporting of data according to student characteristics. (Contains 10 figures, 2 appendixes, and 60 references.) (SLD)

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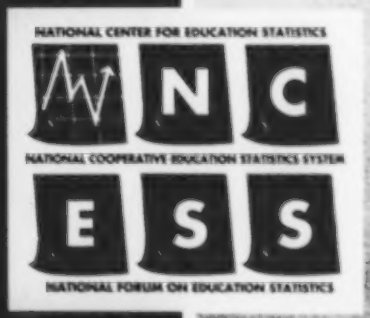
ED 388 708

Improving the Capacity of the National Education Data System to Address Equity Issues

An Addendum to *A Guide to Improving the National Education Data System*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Improving the Capacity of the National Education Data System to Address Equity Issues

An Addendum to
A Guide to Improving the National Education Data System

Prepared by
the National Education Statistics Agenda Committee (NESAC)
for the National Forum on Education Statistics
under the National Center for Education Statistics,
U.S. Department of Education

July 1995

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Richard W. Riley
Secretary

Office of Educational Research and Improvement
Sharon P. Robinson
Assistant Secretary

National Center for Education Statistics
Emerson J. Elliott
Commissioner

National Center for Education Statistics

The purpose of the Center is to collect and report "statistics and information showing the condition and progress of education in the United States and other nations in order to promote and accelerate the improvement of American education."—Section 402(b) of the National Education Statistics Act of 1994 (20 U.S.C. 9001).

July 1995

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Improving the Capacity of the National Education Data System to Address Equity Issues: An Addendum to *A Guide to Improving the National Education Data System*[1]

I. INTRODUCTION

Several recent reports have focused on ways to improve the national education database. The report from the National Forum on Education Statistics, *A Guide to Improving the National Education Data System* (1990), makes 36 recommendations for improving data collection in the areas of student/background characteristics, education resources, school processes and student outcomes. It also serves as the national data agenda for the Forum (see Appendix A). The *Guide*, together with the report of the National Center for Education Statistics (NCES) Special Study Panel on Education Indicators, *Education Counts*, comprises the most systematic recent examination of the nation's capacity to measure and monitor educational change. The issue of educational equity--the equal or fair distribution of resources to different student populations, particularly those at risk of school failure--was not fully addressed in the *Guide* and it was the intention of NESAC[2] to complete the agenda by returning later to this issue and incorporating it into the national data agenda. Thus, this paper reviews the issues raised in *Education Counts* and other relevant literature, placing them in the framework of the Forum *Guide*. Its purpose is to focus specifically on the data needed to address issues of educational equity with respect to student populations.

There are four sections to this paper. The first section discusses current equity and at-risk policy issues and the data needed to address them. The second section looks more closely at the data currently available to address these issues. The third section examines limitations in current data collections for addressing equity issues. And the fourth section provides specific recommendations to the Cooperative System and NCES for ways to improve the national data system to address student equity issues.

A. Approach of This Report

At-risk populations are not uniform and face many different and complex problems. Their common and enduring problem is their greater likelihood of experiencing school failure. At-risk students are often identified by their membership in a specific population as defined by characteristics such as race and ethnicity, poverty, special education status, English

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[1]This report is based on a commissioned paper by Dr. Nancy Karweit of Johns Hopkins University. It was revised by Mary Rollefson and members of the NESAC Subcommittee on Student Equity: Dori Nielson, Judy Thompson, Barbara Clements, Joanne Livingston, Tom Pickens, John Rebstoke, and Valerie Truesdale, and Gary Farland; and edited by Lee Hoffman.

[2]The National Education Statistical Agenda Committee (NESAC) is the standing committee of the National Forum on Education Statistics responsible for identifying information needed to complete a data system that would support education policymaking at the local, state, and national levels.

proficiency, or migrant status. Each of these populations, in fact, has its counterpart in a federal program which maintains a separate database on that population. Few of these databases, however, provide data on all of the other characteristics that may put individual students at risk. Thus, while individual students are represented in the aggregate, along with other students who share their risk characteristic, it is often impossible to look *within* the aggregate to see the individual student who may have multiple risk factors. Such separate data collections, although useful in monitoring trends in each special population and in meeting legislative and regulatory requirements, are of limited use in understanding students as whole individuals with complex and interrelated characteristics, and may, in effect, perpetuate the association of risk with single status characteristics.

In this report, therefore, rather than compartmentalizing students on the basis of their membership in any single characteristic group, we identify these status characteristics as they intersect in individual students. This view suggests a student-based rather than aggregated record system: one in which multiple characteristics of students are maintained. As well as incorporating the issues specific to each special population, a student-based system allows identification of those issues that are common across populations and comparison with students who are not at risk. It also permits examination of the myriad other factors, including school context, that may explain school success and school failure regardless of status characteristics.

B. Schooling and Inequality

School attainment and achievement have historically been related to social and economic position. Children of poverty and those from some racial and ethnic minorities have historically had lower school attainment and achievement than majority students (Coleman, 1966, Jencks, 1972). The concern with the unequal distribution of educational attainments and achievements for these special populations arises from issues of both fairness and economics. The over-representation of special populations as dropouts, retained students, and students in the lowest quartile of the achievement range raises questions about the equitable distribution of opportunities. The connection between educational and economic success extends the failure of some groups from the setting of the school to that of the larger society. Whether chartered or organized to do so, schools remain the major credentialing institution for the world of work, with the result that inequities in schooling are translated into the workplace.

The growing concern about the educational future of these special populations arises as well from their increasing numbers. It is projected that the school-aged population will be comprised increasingly of children at risk of school failure because of their membership in race/ethnic or language minorities, and economically disadvantaged groups (Pallas, *et al.*, 1989). There are many social, educational and economic issues related to these changing demographics. The role of the United States in the global economy, concerns about U.S. competitiveness, and the anticipated need for a better educated workforce in a more

technologically complex society also drive the concern for the educational plight of the disadvantaged. For a combination of reasons, then, there has been increased attention to issues related to disadvantaged and at-risk populations.

C. Views of At-Risk and Student Equity

Current proposals for reform of American schools start with differing definitions of at-risk populations. The first group of reforms focuses primarily on improving the capability of individual students. Reforms consistent with this approach include providing preschool education for disadvantaged children, providing additional education services before or after school or in summer school, and increasing educational support for some groups of students. These proposals operate under the assumption that the basic model of schooling works, but that at-risk students need more of what others receive: more time, better preparation, or other efforts to meet the challenges provided by the school.

A second group of reform efforts rejects the approach of identifying and targeting individual students as at risk. In this view, focusing on attributes of at-risk students "blames the victim" for deficits or inabilities to perform in school situations which themselves are dysfunctional. This approach argues that it is the system that has failed the students, not the other way around. There has been a call for more systemic reforms, focusing not just on improving efficiency, but on revamping basic operating conditions of schools. Objects of reform include governance structure, performance assessments, flexibility in resource allocation, and focusing on providing opportunities to learn. The emphasis is on fixing the school rather than the student.

A third view or reform model, and the one used in this report, is a dynamic view in which being at risk results from the interaction between the individual student and the learning environment. Being at risk in this model is a condition or circumstance brought on by the "failure of the developmental environment to support the needs of the developing person" (Gordon, 1992, p.4). Individual characteristics may put a student more at risk but the characteristics of the environment may mitigate for or against the individual experiencing difficulties or failure. In this model, both the individual and the environment may be identified as potentially at risk.

1. Indicators of Risk

At-risk students are typically identified either on the basis of membership in a special population or on the basis of achievement. However, these two methods do not necessarily provide the same classification of the student as being at risk. Researchers have proposed several variables indicating that students may be at risk of school failure, including race, ethnicity, nativity (country of birth), English proficiency, maternal education, and family poverty status (see Figure 1.0). Total dependence on any one of these indicators, however, will lead to some misclassification; many students who are at risk by virtue of special population membership do not demonstrate school difficulties or failure and many children

who experience difficulties or failure with school are not members of special populations. A data system that provides information on both the risk characteristics of the environment and those of the individual in that environment allows research on how the two interact and has important implications for school reform. Identification of at-risk students by performance or achievement measures may also misclassify children, especially the very young (i.e., preschoolers) for whom measures of performance or achievement are of questionable validity.

Figure 1.0 Demographic Characteristics of Students and Families That May Put Individuals and Schools at Risk

Domain	Individual level	School level
Student	Sex Race/ethnicity Language Mobility Immigrant status	 race/ethnic composition Percent LEP % turnover % immigrant
Family	Income, SES Education: mother, father Employment:m/f Family structure	Income distribution, SES distribution % families in poverty % single parent families

2. Views on Student Equity

In addition to these different views of at-risk, there are also different views of equity. Equal access to resources and opportunities is probably the most common view. Examination of factors such as course-taking patterns, exposure to high quality instruction and course content, enrollment in specific tracks by race/ethnicity, sex, and other groupings are examples of looking at equity issues in terms of equal access. Each factor has been emphasized in research and policy analysis.

Another definition of equity is in terms of access to resources and opportunities proportional to individual need. This is the view of the categorical programs such as Chapter 1, and Special Education, and is the perspective taken in this report. The fact that children vary markedly in their abilities, competencies, and rates of learning suggests that equitable distribution of resources (considering need) would result in *unequal* distribution of resources.

Taken together, these views of at-risk and equity provide a general framework for discussing equity issues related to special populations. Figure 1.1 gives examples of issues and topics discussed for different definitions of these two factors. Most discussions of equity have

centered around issues defined by access to equal resources for at-risk children (cell 1 of figure 1.1). Most data collection efforts at the national level appear to be organized from this point of view as well. In the next section the data implications of equity defined as access according to individual need and at-risk defined as an interaction between the student and the environment are discussed.

II. POLICY ISSUES AND DATA NEEDS

The national indicator panel, in its report, *Education Counts*, suggested five issue areas, in addition to equity, as the core elements to assess the education system: learner outcomes, quality of educational institutions, readiness for school, societal support for learning, and education and economic productivity. In this section, each of these issues is reviewed for its pertinence to student equity.

Figure 1.1 General framework for discussing at-risk and equity issues

	Equity	Definition
At risk definition	A. Equal access to resources and processes	B. Access to resources and processes equal to needs
1. Individual at risk	*Access to equal resources all students* -- e.g. courses, tracks, schools, higher order thinking, quality teaching by race, sex, ethnicity of student	*Access to additional resources to meet needs* --e.g. additional help, special programs, reported by race, sex, ethnicity, LEP status
2. School at risk	*Access to equal resources and processes all schools* -- e. g. funding equalization	*Access to additional resources to meet needs* -- e. g. differential funding
3. Interaction traits/context	*Equal access to resources does not meet individual needs*	*Access to resources proportional to individual needs*

A. Learner Outcomes

Traditionally, student achievement data are aggregated and reported by standard categories of race, ethnicity, and sex. This practice is consistent with the traditional view of at-risk as defined by status characteristics of the individual. More recently, however, NCES has begun reporting such measures by the school level characteristics such as urbanicity, geographic location, school size, or student characteristics aggregated at the school level such as percent minority enrollment, percent eligible for free lunch (as an indicator of poverty level), or percent enrolled in Chapter 1. This practice is consistent with a view of at-risk as determined by the interaction of status characteristics and environments.

Three arguments support reporting student outcomes by aggregate school characteristics in addition to student status characteristics. First, the practice diminishes the equating of being at risk with membership in a particular racial or ethnic group. Second, it suggests critical contextual factors that may be important in determining who is at risk, and may clarify the relationship between individual and contextual characteristics. There is evidence, for example, that children of poverty who attend high poverty schools have lower achievement than do comparable students in low poverty schools (Karweit, 1983). The concentration of children of poverty in addition to the child's own poverty creates an additional disadvantage. Similarly, the *National Dropout Statistics Field Test* report (NCES, 1992) found that students were more likely to drop out of schools in which they were in the minority regardless of individual race and ethnicity. Third, reporting by aggregate characteristics of the school provides a means of monitoring the effect of school reform efforts on the reallocation of resources and the delivery of instruction. Data on other student outcomes in addition to achievement are important as indicators of student transition through the education process and, like achievement, should be reported by aggregate school characteristics as well as individual student characteristics. Figure 1.2 lists these outcome measures.

Individual student level data have been critical in improving our understanding of the variations in student performance. For instance, when data on poverty and SES of individual students are used in the analysis of achievement data they are found to explain much of the variation otherwise attributed to race.

B. Quality of Educational Institutions

Another issue area identified by the indicator panel is the general area of school quality. Several issues make up this topic, including learning opportunities, the preparation and quality of teachers and teaching, school climate and school characteristics. Traditionally, these features are looked upon as resources or stocks in which the level of the resource is believed to directly influence student outcomes. Resources such as time, money, and quality teachers are argued to be causally and positively related to student outcomes.

Figure 1.2 Student outcomes indicating successful transitions

Factor	Measure
Retention	Regular promotion
Completion	Graduation dropping out
Attendance	Absent only for health reasons
Discipline/behavior	Age appropriate behavior, suspensions, disciplinary actions
Attachment/ participation	Extra-curricular activities, effort and conduct marks
Engagement	Attitude, beliefs toward school and future consistent with staying in school
Achievement	Performs at or above expectation

From a policy point of view, establishing the connection between resources and outcomes has proven more difficult than common sense or conventional wisdom might suggest. For example, despite the apparent almost tautological nature of the connection, the relationship between the amount of time in school and student performance has been difficult to establish. However, a recent adult literacy survey strongly supports the increase in literacy proficiency that comes with increased years of education (NCES, 1994).

Some of the difficulty is created by imperfect measures of the actual utilization of resources. Resources may be allocated and measured at the school level; however, within schools (or classrooms) there is appreciable variation in the access to and use of these resources. For example, there is a fairly uniform school year in the United States, with most schools operating 180 days per year, 6 hours per day. Within this uniformity, however, great disparities in opportunities for learning exist. These differences arise from a complex chain of decisions, choices and actions at the district, school, teacher, and individual student level (see Figure 1.3). Factors such as student absence, school disruptions, and classroom interruptions create quite different amounts of learning time.

Figure 1.3 Quantity of Schooling

Factor	Level (measurement)
Allocated time	State, District (days, hours)
Attendance, tardiness	Student (days)
Early school closing, late starts	School (hours)
Course exposure, subject time allocations	Teacher, student (minutes/day)
Scheduled instructional time	Classroom (minutes/day)
Actual instructional time	Classroom, student (minutes/day)
Engaged time	Student (minutes/subject)
Engaged time, new content	Student (minutes/subject)
Time needed to learn	Student (minutes/subject)
Interest, effort level	Student (measure of engagement)
Perseverance, meaning	Student (measure of engagement)
Perceived fairness of effort/reward	Student (attitude, perception)

However, although this conversion from allocated to actual time is variable, it is highly predictable. High poverty, low achieving schools, where time is most needed, have the lowest levels of actual time available for learning (Karweit, 1983). For this reason, increasing the amount of allocated time by such means as lengthening the school year is argued by some to have little potential for increasing learning time unless the underlying problems of absence, tardiness, disruptive behavior and classroom management are simultaneously addressed.

Even if the amount of time and other resources were equalized across schools, classrooms, and students, resource inequities might still remain. Students need different amounts of time to accomplish similar tasks and activities. Estimates of the variation in the time needed suggest ratios of approximately 6 to 1 (Gettinger, 1984). Recognizing the differences in time needed to learn implies that even if time spent were equalized vast inequities would remain in outcomes due to failure to attend to differences in time needed. This suggests that there needs to be careful measurement of the resources in place, the resources as utilized, and some indication of the extent to which the resources were commensurate with what was needed. Quality is argued to be conditional on this matching of resource need and level.

C. Readiness for School

Children vary greatly in the language, social, and other competencies that schools and teachers expect of children when they enter school. It is important to recognize that "readiness for school," however, is situation specific. What kindergarten children are expected to know and be able to do differs across schools and classrooms. To be at risk of early school failure can be seen as the consequence of both the experiences and competencies of the child and the expectations and offerings of the classroom.

According to this view, to gauge readiness one would need to know about the child and the context. This distinction is important from a policy point of view because it redirects the discussion from a focus on unready children (cell 1 of Figure 1.1) to an examination of children's readiness in the context of the schools' readiness. At risk in this view is a failure of the learning environment to support the child at his or her current stage of development by setting expectations too high or failing to provide developmentally appropriate curricula.

Many factors--health, family stability, social and cognitive stimulation--affect children's readiness (see Figure 1.4). The data collection system must keep track of the factors that put young children at risk, as well as investments the school and community make (e.g., prekindergarten and other early childhood programs, health care) in counteracting the deleterious effects of such factors. At the same time, school and classroom practices that place students at risk of failure, such as unrealistic goals and expectations, and related practices of screening and retaining children, need to be monitored as well.

D. Societal Support for Education

Societal support for learning includes the involvement of families and communities, as well as cultural and financial support. Figure 1.5 lists key factors in the family, community, and

Figure 1.4 Factors Affecting Readiness for School

Level/ source	Practices/Activities	Status
Child		Health, birth history, prenatal care
Family	Actual practices related to preparation for school, home literacy practices, child rearing practices, time with child , regular health monitoring/care, prenatal care	Family size, education, poverty, number of adults
Commu-nity	Community center activities, Head Start centers, early learning or day care centers, out-of-home care	Health hazards, educational level, connection or isolation of social networks
Class-room	Developmentally appropriate practice, expectations, goals, consistency	Background, connections or isolation of peer social relations
School	Screening practices, preparation practices provision of preschool, provision of full day kindergarten	Retention, tracking

culture as a whole. Although research on these areas is far from complete, there is probably more information about how families influence and support their children's education than on any of the others. Parent involvement at home and in the school has been examined in High School and Beyond (HS&B), the National Education Longitudinal Survey (NELS), and the National Education Household Survey (NHES). These examinations suggest that parents of younger students are more likely to be involved than parents of older children in activities of the school, although it is not clear if this is due to parental or school factors.

1. Community and Cultural Support

Community support and investment in education are areas in which some theoretical work is being done, but as yet there is little systematic definition of the issues and data needs in this

Figure 1.5 Societal Support for Learning

Family support for learning	Community support for learning	Cultural support for leaning	Financial support for learning
Parent interactions with child in support of learning (number of adults/time available) Parent knowledge of importance of reading aloud to children Availability of appropriate books for reading with child Ability to read Understanding importance of activity for child	Facilities such as libraries, community centers, churches, schools Barriers to use such as fees, unsafe neighborhood, hours of operation, feeling unwelcome, distance, inaccessibility Community willingness/ability to provide services	Perceptions of education as important for future Voting behavior Willingness to pay as function of ability, given community wealth and demands for competing services	Expenditures for instruction School wealth in terms of present resources and ability to raise new resources School willingness or ability to provide resources

area. Appreciable work is needed to identify resources, opportunities and features of communities that facilitate and support education.

Cultural support issues involve many interesting topics; of particular interest for addressing equity issues is the notion of engagement in schooling. By engagement in schooling is meant the development of behaviors, attitudes, and dispositions that are conducive to achievement and persistence in school, that are consistent with and underscore the importance of schooling in the larger scheme of things, and that see a positive connection between schooling and later life chances. Some researchers (e.g., Ogbu, 1991, 1992; DeYoung, 1992) argue that

disadvantaged youngsters do not see the connection between school attainment and their future. The cultural explanation for this lack of connection contends that valuing school goals may be at odds with cultural norms or values, creating a tension between maintaining cultural identity and succeeding in the dominant culture.

The notion of academic engagement or disengagement does not just apply to low socioeconomic background groups (Hess, 1992), but to groups defined by race/ethnicity, gender, or handicapping condition as well. If group membership is stigmatized or carries with it low expectations or low social status, it can affect aspirations and attainments of individual members. These support factors cannot be understood indepth without data on individuals and how these factors interact with their multiple characteristics.

2. Financial Support

One of the most obvious societal supports for schooling is financial expenditures on education. Expenditures and the extent of inequities in funding have long been topics of concern, and are of renewed interest to researchers (Fowler, 1992) and parties to court cases in several states where the constitutionality of funding formulas has been challenged (e.g., Texas, Kentucky, New Jersey).

The question of whether money makes a difference in student performance has been debated widely. Hanushek (1986, 1991) in his analysis of several studies concluded that there was no evidence that increased resources of several types had any effect on student performance; he challenged educators to look to other means besides increasing resources to achieve school reform. However, an analysis of the same data by Hedges, Laine, and Greenwald (1994a) lead to the opposite conclusion: that with few exceptions these studies support positive relations between each of the same resources and student outcomes. In reviewing Hanushek's work, these authors state that, "Given limited state budgets and questions about the efficacy of public schools, [such] evidence that school expenditures are unrelated to student performance has deflected attention from the question of revenue *sufficiency* [emphasis added] in discussion about how to improve education (p.5)." Their question is not whether or not resources matter but *how* they matter. Although the two sides disagree about methods and conclusions, it seems apparent that the debate cannot be resolved without finance and other resource data linked to data on school context, processes, student background, and outcomes. To analyze the effect of financial resources on outcomes, we would follow dollars to schools, programs, and classrooms so that we could have a better idea of the actual financial outlay to particular students of particular characteristics. Tracing dollars requires a method to calculate how per pupil monies are spent, as well as a means of connecting those monies to the characteristics of students receiving them. Comparability in accounting categories is essential, as is a means of recording characteristics of students receiving these resources.

E. Education and Economic Productivity

The pipeline metaphor is frequently used to describe the progress of students through the educational system and into the labor market. Many disadvantaged youngsters never reach the end of the pipeline, instead they drop out of school before receiving a high school diploma. The antecedents to dropping out are also located in this educational pipeline, in the twists and turns of students' educational histories and experiences. Early academic difficulty, retention in grade, and early behavior problems are all predictive of dropping out of school. To increase the likelihood of staying in school, we need to focus on key events along the way that help create the statistic, not just on the population at the point of dropping out. Lack of success in school, both academic and behavioral, is an important indicator to track as children progress through the system. The major joints or transitions in the school pipeline include home to school, kindergarten to first grade, primary to upper-elementary, elementary to middle, middle to high school, and high school to postsecondary school and/or into the world of work. Specific measures that could be used across these transition points include absence from school, promotion or retention in grade, behavioral and discipline problems, and attachment or engagement behaviors. To understand the causes of student success and failure in this process, research data that track individual students through these critical transitions are needed. Figure 1.6 lists some indicators that affect persistence across the domains of classroom, school, family, and community.

As the nation's demographics change, the "average" is increasingly made up of extremes, making it more important to report statistics on all parts of the distribution, along with their demographic composition. The changing demographics also have implications for design of data systems: specifically the importance of covering populations that are small or geographically concentrated (e.g. American Indians), as well as those not easily captured in current school-based surveys (e.g. migrant students, preschoolers).

III. CURRENT DATA COLLECTIONS ON STUDENT EQUITY

Data currently collected by NCES and by other federal agencies are described in Figures 2.1, 2.2 and 2.3 in terms of the levels at which data are collected, the levels of aggregation possible, and whether they come from sample or universe collections.

Figure 1.6 Factors Related to Persistence in School

Measure	Family	Classroom	School	Community
Attendance	Values and actions indicating importance of regular school attendance -- gets child to school on time	Child feels important, welcome in class	Consistent attendance policy, notification system	Norms/expectations for school attendance
Promotion	Expectations, own experience, other children's experience	Teacher beliefs, practices	Retention/Promotion policy	Experiences norms, expectations for staying in school
Behavior	Consistent discipline	Consistent, reasonable, appropriate	Consistent policy	Reinforcement of norms of behavior
Engagement	Valuing of school, seeing school's connection to future	Practice of supporting and engaging all children, expectations of success	Policies supportive of participation and engagement	Examples, norms expectation for persistence

Figure 2.1 reports the type and level of data collected from various program offices in the Department of Education and the Bureau of Indian Affairs (BIA). Most of these collections serve compliance or regulatory purposes, and therefore consist in large part of counts of students by characteristics pertinent to those regulations. With the exception of the Office of Civil Rights (OCR) and the BIA, all collect data at the state level. Chapter 1 data also include counts of students by special education and limited English proficiency (LEP) status. The OCR data are perhaps most comprehensive, reporting students by special education, LEP, gifted and talented, and race and sex; but the sample coverage is not representative of all districts and schools in the United States. Migrant education and Chapter 1 are the only collections that report on student achievement.

Figure 2.1

Content Coverage of Reports from Offices in U.S. Department of Education and the Bureau of Indian Affairs

Office	Special Education	Migrant	Chapter 1	OCR	Head Start	BIA
Reporting	Census	Census	Census	Sample		Census
Level	State	State	State	Districts, Schools		
Race/ Ethnicity		State	State .Chapter 1	School		
Sex		State		School		
Special Education or Disability	State .Age	State .sex	State .Chapter 1	School .race .sex .raceXsex	School	School
Chapter 1			State			
LEP		State .grade	State .Chapter 1	School .race .sex .raceXsex		School
Poverty				School	School	
Gifted & Talented				School .race .sex .raceXsex		School
Quality						
Resources & Expenditures						
Tracking						
Retention						
Disciplinary Removal				School .race .sex .raceXsex		
Absence						
HS Complete				School .race .sex .raceXsex		
Achievement		State .grade .subject	State .grade .subject			

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Figure 2.2 provides information on NCES repeated cross-sectional surveys of elementary and secondary education. Each of these provides data on students, including some special population characteristics. The Common Core of Data (CCD) is an annual universe collection of public schools and districts, designed for basic reporting and to serve as a sampling frame for other surveys. It reports limited student characteristics at the school and district level. The Schools and Staffing Survey (SASS) collects data on school processes and conditions, and includes some student characteristics at the school level. The National Assessment of Educational Progress (NAEP) collects some student and family background data as a context for reporting student achievement. To date, although these surveys cover combinations of background, resource, process, and outcomes data, no survey has included both fiscal and outcome data. Beginning in 1993, the CCD will report fiscal data at the district level, and since it is a universe collection it will be possible to link the fiscal data to the background, process, and outcome data collected on the public school sample surveys.

Figure 2.3 summarizes the major national longitudinal surveys. Traditionally NCES longitudinal surveys have begun with eighth- and twelfth-grade cohorts (High School and Beyond and the National Longitudinal Survey of 1972), and more recently have begun at the eighth and tenth grades (NELS:88). To date no longitudinal surveys have covered the preschool years or the upper elementary years. The Prospects Survey includes first-, third-, and seventh-grade cohorts, and transitions from primary through middle and secondary levels; but it is a one-time survey and samples only Chapter 1 eligible students. NCES plans a longitudinal survey beginning in 1996 with kindergarten and following through fourth grade, but currently has no plans for another longitudinal survey to update HS&B or NELS.

IV. LIMITATIONS OF CURRENT DATA

Given the issues defined by the national indicator panel and the view of at-risk in this paper, we turn now to the limitations of existing data sets for addressing equity issues. The limitations are of three general types: (1) inconsistent definitions across the surveys, resulting in difficulties in comparing results or aggregating data across data collections and reporting units; (2) incomplete coverage of background, resource, process, and outcome issues that would allow each area to be examined in relation to the others for research and policy purposes; and (3) gaps in data at the national level that leave important issues and student populations uncovered.

A. Definitions

Several constructs used in describing special student populations are defined and reported inconsistently. These are race and ethnicity, limited English proficiency (LEP), special education status, Chapter 1 eligibility, and poverty level.

1. Race/Ethnicity

How are race and ethnicity to be defined and reported? The Office of Management and Budget (OMB) set a standard for federal agencies in 1977 (OMB Statistical Policy Directive No. 15, *Race and Ethnic Standards for Federal Statistics and Administrative Reporting*) that includes five race/ethnic categories on the basis of individual self-report. There is growing

Figure 2.2

Content Coverage of NCES Repeated Cross-Sectional Surveys

Survey Characteristic	CCD	SASS	NAEP
Sample basis	Universe	Sample	Sample
Level of data collection	State District School	School, District Teacher & Administrator	School Student & Teacher[3]
Race/Ethnicity	School	School	Student
Sex		School	Student
Special Education or Disability	District	School	Student
Chapter 1		School	School, Student
LEP		School	Student
Poverty, SES	School	School	School, Student
Gifted/Talented		School	
Quality			
Resources & Expenditures	State	School & District	
Tracking		School	Teacher, School
Retention			Student, School
Disciplinary Actions			School
Absence		School	Student
HS Complete	District	District	
Achievement			Student

[3]Teachers in NAEP are not a random sample of teachers in the school, but rather are selected to respond as teachers of randomly sampled students to provide information about their instruction.

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Figure 2.3

Content Coverage of Longitudinal Studies Conduded by U.S. Department of Education

Survey	NELS:88	HSB	Prospects (Chapter 1 Study)
Sample	800 public schools 200 private schools, 26000 8th and 10th grade students followup as 10th & 12th graders in 1990 and 1992	Sample	Sample 1st, 3rd and 7th graders in schools selected by region, urbanicity, SES n=18,000 1st and 3rd n=9,000 7th, also supplement Catholic schools, second language concentration and schools using special strategies
Respondents/ Data Source	Student, Parent, Teacher & School Administrator		Student, Parent, Regular Teacher, Chapter 1 Teacher/Aide, School Administrator, District Chapter 1 Administrator, Records Abstraction
Race/Ethnicity	Student		Student R/E reported by teacher & parent
Sex	Student		Student sex from cum record
Special Education or Disability	Excluded but then resurveyed		Student disability reported by teacher
Chapter 1			Student services reported by teacher & student
LEP	Student (report by teacher)		Student self report, teacher & parent
Poverty/SES	Student/Parent		Student report parent occupation, teacher report free lunch
Gifted/Talented			Student placement reported by teacher
Quality			Classroom practices reported by teacher; co-ordination services Chapter 1 regular
Resources & Expend			District administrator
Tracking	Student	Student	Student placement reported by teacher
Retention	Parent		Student retention reported by teacher, abstraction
Disciplinary Actions			Student self report, teacher report
Absence	Student	Student	Teacher report
HS Complete		Student	
Achievement	Math, science, social studies and reading	Math, cience, social tudies, reading	Standardized tests, grades, teacher judgments about competencies

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dissatisfaction with these categories, however, because they force individuals to choose one race when increasing numbers of people are of mixed racial background, and because they fail to make distinctions between racial or nativity groupings, such as African-Americans vs. black immigrants, or among various groups of Spanish descent, such as Mexican and Puerto Rican. Further, several states allow the reporting of categories beyond the standard five, including "other", or mandate several additional categories. In general, the categories set forth are becoming less useful in reflecting the diversity of the nation's population.

As a result of the increasing criticisms of the OMB race and ethnic categories, OMB has begun a process for public review and possible revision of this directive. Through a variety of media including public hearings, written comments, and electronic exchange, the public has been invited to comment on the adequacy of the current categories, the principles governing revisions, and specific suggestions for changes. Congressional hearings, a National Academy of Sciences workshop, and an interagency committee also have been convened to obtain input from government, policy, and research communities. The Bureau of the Census is conducting research on how individuals report race and ethnicity, and the U.S. Department of Education, through NCES, is conducting a survey on how these data are kept and reported in elementary and secondary school administrative record systems. The NCES survey was conducted in early 1995 and will be reported late in 1995.

2. Limited English Proficiency (LEP)

This characteristic is defined in numerous ways by different states and federal agencies. The Office of Bilingual Education and Minority Language Affairs (OBEMLA) provides reports on LEP students based on data from states, but the states use different definitions. The Office of Civil Rights (OCR) uses the definitions reported to OBEMLA for LEP and the Office of Special Education Programs (OSEP) definitions for disabilities. Coverage of LEP students in national surveys is inconsistent and often results in poor estimates. NELS:88 originally oversampled LEP students, then excluded them because of difficulty in testing, and finally relocated and interviewed them. LEP students are excluded from NAEP at the discretion of the school principal. The 1990 Census asked if the child spoke a language other than English, what language was spoken, and how well the child spoke English. Such differences in definitions produce different estimates of the number of LEP students.

3. Special Education

In 1992, special education programs served more than 4.3 million children between the ages of 6 and 21, about 48 percent of whom were classified as learning disabled (LD). This was three times the number classified as LD in 1976. Such an increase in the number of LD students raises the question of whether there was an increase in the occurrence of disability, increased diagnosis of disability, or simply a broadening of the definition. The federal mandate that special education programs be individualized allows considerable latitude in the choice of assessments and placement practices, thus effectively adding variability to the definition.

4. Chapter 1

The variations in eligibility for Chapter 1 due to individual district and state interpretations and decisions about allocations results in some overlap of Chapter I and Special Education services. Although individual students do not usually participate in both programs concurrently (Moore and Steele, 1988), this is more a result of distribution of scarce resources than agreed upon differences in eligibility.

5. Poverty

Measures of poverty and of socioeconomic status (SES) are very important to the reporting of student data, especially achievement data, since these factors often explain differences in student outcomes that might otherwise be attributed to race and ethnicity. Much of the black-white gap in achievement scores, for instance, disappears when the socioeconomic status (SES) of the student is taken into account. Without direct measures of family income and parental education and occupation, however, poverty and SES are difficult to measure at the individual student level. Surveys that collect data on individual students and that administer parent background questionnaires have obtained data on family income, along with other SES measures such as parental education and occupation (e.g. HS&B, NELS:88). Surveys that do not include parent surveys (e.g., NAEP, SASS), however, must rely on either student reports of family SES (which are of questionable reliability, especially at younger ages) or on school administrative records data, which at best are limited to student eligibility or participation in the free lunch program. Because of the income requirement for the free lunch program, it is sometimes used as a poverty index in NCES surveys; aggregated at the school level it is used to classify schools by poverty status for reporting purposes. Even as a proxy for poverty, however, free lunch data are limited because: (1) eligibility for free lunch is usually known only for the students who apply for participation; (2) participation often is stigmatized, especially among secondary level students, discouraging eligible students from applying and resulting in an undercount; and (3) schools vary in their use of free lunch funds. Some schools that have a large percentage of eligible students provide free lunch to all students regardless of eligibility, and may not keep records of individual eligibility.

B. Content Coverage

A second problem with the usefulness of the data sets is their coverage of the issues important in specifying a full model of the education system, such as the issue areas identified by the indicator panel (learner outcomes, societal support for learning, quality of educational institutions, readiness for school, education and the economy, and equity), or the model specified in the original NESAC Guide (background, resources, processes, and outcomes). The quality of the data analysis for research and policy purposes depends upon the completeness of the data in measuring key aspects of the education system.

How many of the data sets identified provide adequate information across these content areas? Gaps in content coverage within a single survey are perhaps inevitable due to the constraints of cost and respondent burden. The Schools and Staffing Survey, for instance, is

rich in data on school resources and processes, but quite limited in data on student outcomes. Conversely, NAEP and NELS:88 are rich in student outcome data, but have limited background and resource data and represent only specified ages and grades or cohorts of students.

To the extent that individual surveys are limited in expanding their content coverage, alternative methods of linking data across data sets or surveys should be explored. The technical capability currently exists to link CCD fiscal data (beginning with 1990 CCD) to outcome data from NAEP and NELS, and to background and process data from SASS. This is an example of the powerful analytic payoff of technology that comes at no cost in terms of extra respondent burden on the sample surveys. What is required for this linkage, however, is a common sampling frame--the CCD for all public elementary and secondary education surveys and the Private School Survey (PSS) for all private elementary and secondary school surveys. To link the non-fiscal resource and process data from SASS with the outcome data on NAEP or NELS:88, however, would require an overlapping sample of schools.

Other gaps in content coverage are due to conceptual and measurement problems. How do we define and measure such constructs as societal support for learning, the quality of educational institutions or of teachers, or opportunity to learn and engagement in learning? Some progress has been made in identifying the dimensions of these issues, but additional theoretical and measurement work is needed before they can be adequately addressed by national data collections.

C. Population Coverage

In addition to gaps in content coverage, there are gaps in coverage of certain populations of students as defined by age or grade level, race, and ethnicity. Gaps occur in both longitudinal and cross-sectional surveys, and are especially noticeable for populations of American Indian, preschool, LEP, migrant, and special education students.

NCES longitudinal data collections have focused on older students from grade 8 onward, leaving the preschool through middle school years without a research database to analyze important developmental effects. The proposed longitudinal survey following children from kindergarten through grade 4 will greatly improve coverage of this age range, but the lack of plans to begin another NELS longitudinal survey in the late 1990s at the secondary level creates a future gap. In addition, there are still important longitudinal data gaps in the years prior to kindergarten and in transition from the upper elementary to secondary school level.

Population gaps can also occur in cross-sectional surveys. Lack of a comprehensive sampling frame of preschool programs leaves preschool programs and staffing completely uncovered.[4] SASS, for instance, could be expanded to the preschool level if a sampling frame were available. SASS is representative of all elementary and secondary schools in the nation, and therefore provides access to special populations of students through the technique

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[4]In *A Statistical Agenda for Early Childhood Care and Education,* the Forum recommended that NCES create a universe of early childhood programs and implement a survey of these programs.

of oversampling. In the 1993-94 SASS, for instance, coverage of schools serving American Indian students was vastly improved by oversampling public schools with high concentrations of American Indian students. In addition, data were collected on a sample of Bureau of Indian Affairs (BIA) and tribal schools. Such oversampling, of course, requires that data on the racial/ethnic composition of schools or on the other special population characteristics be available on the sampling frame, on the CCD, or the PSS in the case of elementary and secondary schools. It is more difficult to improve coverage of LEP or migrant students in surveys because information about these populations is not available on the CCD sampling frame. Information on geographic concentration (in the case of migrant students) or prevalence among certain racial/ethnic groups in certain locations (in the case of LEP students) may help in oversampling.

In addition to the problems of sampling these special populations, there is the unresolved issue of whether or not to include some student populations in surveys that employ achievement tests or cognitive assessments. NAEP and NELS both have decision rules about exclusions of LEP and special education students, but differences in definitions and implementation at the school level result in inconsistent application of the rules and thus noncomparable data. NCES, recognizing the policy need for data on LEP students, recently convened groups of experts to advise the agency on the guidelines for inclusion of those students in NAEP and NELS.

V. RECOMMENDATIONS

Many of the recommendations in the *Guide* (see Appendix A) and in this report suggest the need for a student-based record system that captures, with common definitions and reporting metrics, information on multiple characteristics of individual students. The conception of a common set of student information is critical to the development of a comprehensive national system that addresses important equity issues and allows state-to-state and state-to-nation comparisons. Several national projects and activities including SPEEDE/ExPRESS, the Student Data Handbook, and Goal 2 of Goals 2000 are consistent with this approach. It is important, however, to distinguish key features of this proposal along the following dimensions: (1) a record system versus a data system; and (2) data for administrative and accountability purposes versus data for research purposes.

A Student-Based Data System Versus a Student-Based *Record* System--In this report we distinguish a student-based **data** system--a literal database with individual student level records that can be aggregated from the local to the state and national level--from a student-based **record** system -- a system for maintaining student records using a common set of definitions and reporting procedures. A common student-based data system may be a long term goal of the Forum, and in fact such systems are being developed in several states. Such a database, however, is not what is being recommended here. On a national level, a common student-based data system would require technical refinements still under development and the resolution of data privacy and confidentiality problems. What is being recommended is the latter--a student-based **record** system, with individual student data kept according to the same definitions at local, state, and federal agency levels. Such a record system is compatible in the long run with a student-based data system, should that goal be adopted and the technical and privacy issues resolved. In the meantime, the development of

a common student-based record system will facilitate the collection of state and national data in a more efficient manner than currently is possible, and promote the comparability of data at all levels.

Data for Administrative and Accountability Purposes Versus Research Purposes--An important distinction needs to be made between the types of data needed at local and state levels for administration and management of school systems versus the types of data needed for educational research and policy analysis. The former, by definition, are more comprehensive and likely to require data on all individual students in the school, district, and possibly in the state; and may entail information on students' class schedules and teacher assignments over school years. The latter, data for research purposes, would be collected on a sample rather than a census basis, and would include the type of information not normally kept in administrative records, such as information on student engagement and motivation, transition experiences, use of time, or other constructs suggested by research. It would be inefficient to build one system to serve both administrative and research purposes; rather what is recommended here is akin to the "mixed model" recommended by the Indicators Panel, "...which envisions national [data] on the one hand, and state and local [data] on the other, with a subset of [data elements] held in common" (p.55). At the national level data elements would be specified, defined, and collected around national issues as defined by members of the Forum. Common data elements would be collected in parallel by states using the agreed upon national definitions and measures. State and local data would be specified, defined, and collected independently by states and local districts for their own use.

With these qualifications, the following specific recommendations are made:

A. Create student-based record systems

1. NCES and the Forum should promote the development of student-based record systems with common definitions and/or reporting metrics for basic status variables related to equity, in order to examine the effect of multiple risk factors as they intersect in individual students. These individual status variables are:

- o race and ethnicity
- o limited English proficiency
- o handicapping condition or disability (special education status)
- o nativity
- o poverty status using family income data (the poverty threshold is defined by income and family size, adjusted annually, but what is needed is a standard for collecting and reporting these data for individuals)
- o poverty status using free lunch eligibility/participation (for school level reporting)
- o Chapter 1 participation

o Migrant education participation

2. These definitions should be developed in coordination with the *Student Data Handbook*, using those definitions and reporting standards to the extent possible and providing input to that endeavor when differences arise. Appendix B provides the *Student Data Handbook* definitions for most of the status variables listed above.

3. These common definitions should be adopted for use in all federal agency reporting requirements, including all programs in the Department of Education, all NCES elementary and secondary school surveys, and all state and local record systems.

4. The National Cooperative Education Statistics System should support the exchange of information and technological capability across states and school districts to develop student-based record systems.

B. Link current and future elementary and secondary surveys

In order to maximize database linkages of current data collections for the purpose of improving the coverage of equity information on student background characteristics, educational resources, processes, and outcomes, it is recommended that:

1. All NCES elementary and secondary school surveys use CCD as their sampling frame for public school samples and the Private School Survey (PSS, the private school universe collection), for private school samples. This would allow use of data on CCD and PSS in analysis of sample survey data from those same schools, and in the case of public schools the use of fiscal data and Census Mapping data.

2. NCES re-examine the feasibility of combining SASS and NELS or SASS and NAEP collections in a *small national* subsample of schools to link the rich background, resource, and process data available from SASS with the student outcome data from NELS or NAEP for research purposes. In the design of this collection special attention should be given to minimizing the respondent burden in the sampled schools by eliminating any item duplication between the surveys, providing assistance or incentives to schools for participation, and possibly by conducting the surveys in two consecutive school years.

3. NCES create an archive or data bank of its elementary-secondary school surveys with the capability for automated on-line searches across surveys by crosscutting topics for use by all interested publics.

C. Develop new measures and indicators and surveys for research on student equity

1. The National Cooperative Education Statistics System should participate in the evaluation of OMB guidelines for categorizing and reporting race and ethnicity.

2. NCES should undertake studies to develop better measures of the following constructs:

   - o societal support for education, including measures of family, community and cultural factors;
   - o student access to education in terms of courses by subject and level and in terms of curricular tracks;
   - o student engagement/disengagement or other measures of student investment in academic education;
   - o student conduct measures reflecting behavior and discipline problems;
   - o school quality and quality of the learning environment, including measures of teacher and teaching quality, classroom instructional quality, and instructional time use;
   - o success of student transitions through critical points in the education pipeline, specifically preschool into kindergarten, kindergarten into primary grades, primary into middle grades, middle into secondary, secondary to postsecondary and to work, and postsecondary to work and to postgraduate studies; and including student mobility across school systems;
   - o indicators of socioeconomic status of students and schools and, in particular, measures of student poverty.

3. NCES should institute plans for another NELS-type longitudinal survey beginning in the eighth and tenth grade in the late 1990s.

D. Report the data by student characteristics

Data should be reported by student status characteristics such as race/ethnicity, sex, and poverty status or SES, not only at the student level (e.g., NAEP scores by poverty level of students, by SES quartiles, by race/ethnic group), but also at the school, district, and state levels by aggregates of these status characteristics (e.g., NAEP scores by poverty status of schools, urbanicity of schools).

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APPENDIX A

Recommendations of the National Forum on Education Statistics from *A Guide to Improving the National Education Data System*

Student and Community Background Statistics

1. Using data extracted from State administrative record systems on the universe of public school students, NCES should annually collect and report State- and national-level aggregates on the following student background characteristics:

   - o Fall membership counts by race/ethnicity by grade;
   - o Fall membership counts by sex by grade.

2. NCES should annually report State- and national-level aggregate statistics collected by other agencies on the following student subgroups:

   - o Handicapped students served, by type of handicap;
   - o Free-lunch participants; and
   - o Participants in compensatory, bilingual, and vocational education programs.

3. NCES, in cooperation with other Federal and State agencies, should work toward the regular collection and reporting of the following State and national student background statistics:

   - o Limited-English-proficiency status;
   - o Student handicapping conditions by race;
   - o Participation in-prekindergarten education programs;
   - o Student health status (e.g., nutrition, health-related absenteeism, and drug and alcohol use); and
   - o Student mobility and migrant status.

4. The Office of Educational Research and Improvement (OERI) should fund special studies investigating the efficacy of using free-lunch data as proxies for student socioeconomic status (SES), and the costs, benefits, and burdens associated with regularly collecting and reporting alternative SES measures. These studies should specifically examine issues of validity, reliability, and usefulness of free-lunch and

alternative measures for different types of reporting and analysis as well as administrative issues related to the collection and reporting of such measures.

5. NCES should develop the capacity to collect and report private school student background characteristics that are parallel to those being developed for the universe of public school students. Data might come from the NCES private school survey and SASS, and they should be reported as national aggregates and, to the extent feasible, State aggregates.

6. In reporting measures of education resources, school processes, and student outcomes from its sample and universe surveys, NCES should attempt, to the extent feasible and appropriate, to provide disaggregated data using the following student and community background characteristics:

   - o Sex;
   - o Racial/ethnic-group affiliation;
   - o Limited-English-proficiency status;
   - o Community wealth; and
   - o Family income.

7. NCES should consider reporting distributional patterns for the following student and community background variables in conjunction with particular resource, process, and outcome measures:

   - o Public/private school enrollment;
   - o Student employment status;
   - o Measures of family background (e.g., parents' education, language spoken in the home);
   - o Student mobility; and
   - o Student handicapping condition.

Education Resources

1. NCES should collect and report a set of national- and State level education revenue, expenditure, and human resource measures on an annual basis, using data items from the National Public Education Financial Survey for Fiscal Year 1989 and the CCD Nonfiscal Surveys.

2. NCES should continue to provide training and technical support to States to "crosswalk" data elements specified by the current CCD Financial Survey as well as other assistance necessary for meeting the Handbook 2R2 classifications.

3. NCES and other Federal agencies should investigate the feasibility of developing a State-by-State statistical measure to adjust education resource data for differences among States and to report education resource trends over time in constant dollars.

4. NCES and other Federal agencies should investigate the feasibility of developing a State-by-State statistical measure to adjust salary data for differences among States and to report education salary trends over time in constant dollars.

5. NCES and other Federal agencies should engage in research and development efforts that will enable them to make accurate, comparable, and informative international comparisons of U.S. national education resource commitments with those of other industrialized nations.

6. NCES should continue to collect and report data from the CCD aggregated to the State level on an annual basis. However, the Center should, over time, develop policies and procedures for the regular collection and reporting of district-level resource data. In moving toward districtlevel resource collections, the Center should be particularly cognizant of (1) identifying potential reports such data could generate and (2) the capacity of States to provide district-level data.

7. NCES should expand the annual CCD State Administrative Records Survey to include: (1) an average teacher salary measure that takes into account contract, career ladder, and other special incentive pay and (2) a teacher salary measure that takes into account degree status and experience.

8. NCES should make a long-term commitment to establishing a program- and functionally-based accounting system. This will provide NCES, policy analysts, and other education researchers with better information about how education funds are spent and make it possible to-relate program resources to the specific education needs of students. The particular program levels to be collected should be determined after additional study,taking into account the costs and burdens associated with the development of comparable definitions of relevant program categories across different locales.

9. NCES should expand the Federal Government's survey of private schools to include resource information. Wherever feasible, the Center should report private-school resource data from its surveys on a State-by-State basis.

10. NCES should establish, as a long-term objective, the collection of data regarding the status of buildings, including the number, age, condition, and facility needs of the Nation's schools.

11. NCES should regularly report data on the number and descriptive characteristics (i.e., age, sex, race) of instructional support, and noninstructional staff in the Nation's schools. Such data should be reported at the State level to the extent feasible.

12. NCES should establish, as a long-term objective, measures that indicate total dollar investments in education personnel. These measures should be specific to different types of staff (e.g., teachers, administrators, instructional aides) and include both direct compensation expenditures (salaries) and indirect compensation (fringe benefits).

School Processes

1. NCES should regularly collect and report national and comparable State-level data on student enrollment in academic and vocational secondary courses by race/ethnicity, sex, and other demographic subgroups as feasible and appropriate. To accomplish this, the Center must first develop procedures for ensuring the collection of broadly comparable data across States on secondary course offerings. OERI should also determine the usefulness of collecting State-level data on time allocated to subjects in the elementary grades (such as that currently collected in SASS).

2. NCES should regularly collect and report data at the national level on broad indicators of teacher preparation (e.g., certification status, number of courses taken in teaching area, major field, and preservice and inservice development and training experiences) by specific teaching assignment. Trends on these measures should be related directly to changes in the size of the teacher work force as well as student enrollment patterns (i.e., teacher supply and demand). In addition, NCES should investigate the feasibility of regularly collecting and reporting comparable State-by-State statistics using such measures and of reporting on the numbers of new teachers certified via "alternativell routes".

3. NCES should regularly collect and report data at the national level on student "opportunities to learn" specific instructional topics. Work should begin first on the high priority subjects included in the national education goals (English, mathematics, science, history, and geography) and then proceed to other subjects. OERI should develop new measures of the depth and breadth of coverage for these topics for possible future collection and reporting at the national and State levels.

4. NCES should regularly collect and report nationally representative data on the school environment including school-level measures of academic emphasis (e.g.,,curricular offerings and enrollments) and decisionmaking practices. To the extent feasible, NCES should relate such data to important background characteristics of students attending these schools (e.g., sex, race/ethnicity, handicapping condition, socioeconomic status) as well as key demographic characteristics of the larger school community.

5. In order to measure progress in meeting the national goal of "safe, disciplined, and drug-free schools" (goal No. 6 adopted by the Nation's Governors and the President), NCES or other Federal agencies should regularly collect and report national- and State-level data on drug and alcohol use and on violence in the schools, as well as on policies and programs undertaken to prevent such occurrences. To develop measures

of these, NCES should proceed immediately to examine the feasibility of augmenting its current sample surveys (e.g., SASS), mounting a new survey (e.g., using the Fast Response Survey System), or working in concert with other agencies concerned with these issues (e.g., Centers for Disease Control, Drug Enforcement Agency). To the extent feasible, these data should be related to the background characteristics of students and their home communities.

6. OERI should fund special studies to improve the measurement of important school processes including academic emphasis, subject-specific instructional strategies, depth and breadth of content coverage, the use of new technologies in instructional programs (e.g., personal computers), and methods of training teachers and assessing their competence. Newly developed measures created through such special studies may eventually be incorporated into future regular national collections and reports.

Student Outcomes

1. Comparable and uniform student achievement measures (the State-NAEP if proven valid and reliable) should provide state-by-state comparisons of knowledge in core content areas (reading, writing, mathematics, science, history, and geography) in grades 4, 8, and 12 at least once every 4 years. Knowledge in other subject areas such as literature, music, art, computer applications, and civics should also be periodically assessed to the extent feasible.

2. Differences in performance among important subgroups of students should be examined and reported at the national and State levels. Subgroups should include those traditionally associated with sex, race and ethnic origin, economic status, and language status. Provision should be made for States, if they wish, to analyze the sample of the student achievement study in their States so that comparisons could be made among education units by significant subgroups.

3. Trends in student performance over time should be reported for all grades and subjects in which the achievement data are collected at the national and State levels. However, reporting trends over time should not restrict the development and use of new assessment forms that tap a broader range of student proficiencies than those typically associated with "paper and pencil" tests.

4. The Office of Educational Restarch and Improvement, including the NAEP program, should give priority to research, development, and experimentation with new assessment techniques that can provide broader and more sophisticated measures of student performance.

5. State-by-State student achievement measures should include in each administration a performance assessment component(s). OERI should enter into cooperative research and development arrangements with State and local largescale assessment programs.

6. Student achievement results should be scaled in a way to allow comparisons with international achievement measures such as those from the International Assessment of Educational Progress (IAEP) and the International Association for the Evaluation of Educational Achievement (IEA). Comparisons with international achievement measures should be made on a regular basis in order to monitor progress in achieving the recently developed national education goal adopted by the Governors and the President.

7. Information should be collected on courses of study completed at the time of national and State student achievement assessments so that links might be made between courses/curriculum completed and assessment results.

8. Discussion should continue into possible linkages of specific features of the NAEP and NELS survey instruments as well as better coordination of the two surveys by NCES. One possibility is to equate the NELS achievement instruments to the NAEP items.

9. NCES, in cooperation with State departments of education, should obtain and periodically report comparable State-by-State data on school dropouts and completers by race/ethnicity, sex, and other important subgroups. The specific measures calculated should include:

   - o An annual dropout rate as defined in the NCES Dropout Field Test or as modified by the results of the field test;
   - o A synthetic cumulative dropout rate; and
   - o A school completion rate incorporating, to the extent feasible, the recommendations of the CCSSO School Completion Task Force.

10. NCES, in cooperation with other Federal agencies and State departments of education, should investigate the feasibility of obtaining and periodically reporting comparable State-by-State data on the following subjects by race/ethnicity, sex, and other important subgroups:

    - o The percentage of high school graduates who enroll in different types of postsecondary institutions within a year of graduation;
    - o The percentage of high school graduates who enter the military within a year of graduation;
    - o The percentage of high school graduates who enter the civilian labor force within a year of their graduation; and
    - o The percentage of high school graduates in the civilian labor force who are employed/not employed one year after their graduations.

11. OERI should fund special studies related to the regular collection and reporting of data on student attitudes toward education and schooling and future aspirations. These studies should investigate both the technical validity and reliability of potential statistics of this type and their perceived usefulness for purposes of education policymaking and planning.

APPENDIX B

Definitions of Status Variables Provided in *Student Data Handbook: Elementary, Secondary and Early Childhood Education*

Educationally Disadvantaged Children--As defined for Federal compensatory education programs, those children who have need for specific assistance so that their level of educational attainment may be raised to that which is appropriate for children of their age. The term includes children who are disabled and/or whose needs for special educational assistance result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large.

Limited English proficient--An individual with a language background other than English, and whose proficiency in English is such that the probability of the individual's success in an English-only environment is below that of a successful peer with an English language background.

Migratory Status--An indication than an individual, or a parent/guardian accompanying an individual, maintains primary employment in one or more agricultural or fishing activities on a seasonal or other temporary basis and establishes a temporary residence for the purposes of such employment.

> **Currently a migratory child**--A child whose parent/guardian is a migratory agricultural worker or a migratory fisher; and who has moved within the past 12 months from one school district to another in order to enable the child, the child's parent/guardian, or a member of the child's immediate family to obtain temporary or seasonal employment in an agricultural or fishery activity.
>
> **Migrant National Certificate of Eligibility (COE) Status** --An indication as to whether a migrant student has completed the COE, indicating that his or her eligibility for Migrant Education Programs (MEP) participation has been evaluated and registered.

Poverty Status--An indication of inadequate financial condition of an individual's family, as determined by family income, number of family members/dependents, participation in public assistance programs, and/or other characteristics considered relevant by federal, state, and local policy.

> **Free-lunch/breakfast program**--A federally-funded program that provides supplemental nutrition in the form of a free meal at noon time/at the beginning of the school day for income-eligible students who are unable to pay the full cost. Public,

private, and non-profit schools participating in the program are reimbursed for the lunches served.

Race/Ethnicity--The general racial or ethnic heritage category which most clearly reflects the individual's recognition of his or her community or with which the individual most identifies.

American Indian or Alaskan Native--A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander--A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

Black (not Hispanic)--A person having origins in any of the black racial groups of Africa.

Hispanic--A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture of Origin, regardless of race.

White (not Hispanic)--A person having origins in any of the original peoples, of Europe, North Africa, or the Middle East.

National/Ethnic Origin Subgroup--The national or ethnic subgroup of a person other than "American." Examples for Asian/Pacific Islanders include: Chinese, Japanese, Korean, Filipino, Hawaiian, Vietnamese, Asian Indian, Samoan, or Guamanian. For Hispanics, examples include: Puerto Rican, Mexican-American, Cuban, Argentinean, Dominican, Columbian, Nicaraguan, Salvadoran, or Spaniard. Tribal background could be listed for Alaskan Natives or American Indians (e.g., Navaho).

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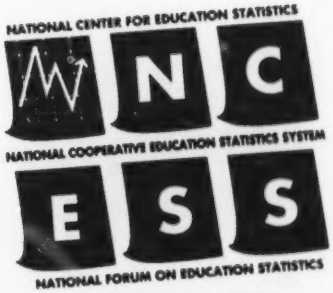
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